

Date: Tue, 17 Aug 93 14:03:08 PDT
From: Info-Hams Mailing List and Newsgroup <info-hams@ucsd.edu>
Errors-To: Info-Hams-Errors@UCSD.Edu
Reply-To: Info-Hams@UCSD.Edu
Precedence: Bulk
Subject: Info-Hams Digest V93 #986
To: Info-Hams

Info-Hams Digest Tue, 17 Aug 93 Volume 93 : Issue 986

Today's Topics:

 'Diversity Operation'?
 Bootlegger At ARRL N.E. Convention
 Cuba & Return postage
 CW Prosigns (was: -.. ..- -- -...)
 Heathkit SB104a
 Questions from Nonham on Portable comm
 Seeking Dial Cord (2 msgs)
 Serious RTTY
 Unbuilt Heathkit Source
 What is needed to RTTY ?

Send Replies or notes for publication to: <Info-Hams@UCSD.Edu>
Send subscription requests to: <Info-Hams-REQUEST@UCSD.Edu>
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Info-Hams Digest are available
(by FTP only) from UCSD.Edu in directory "mailarchives/info-hams".

We trust that readers are intelligent enough to realize that all text
herein consists of personal comments and does not represent the official
policies or positions of any party. Your mileage may vary. So there.

Date: 17 Aug 93 18:40:42 GMT
From: telesoft!garym@uunet.uu.net
Subject: 'Diversity Operation'?
To: info-hams@ucsd.edu

In <1993Aug17.015547.26921@bnr.ca> mwandel@bnr.ca (Markus Wandel) writes:
>I am wondering about 'Diversity operation'. My shortwave receiver has an
>allusion to it in the manual; it involves tying the final IF of two receivers
>together and tuning them both to the same station.

I once worked on a Microwave system that had four receivers and used
space and polarity diversity. There were two antennas spaced about 100'
apart and each one had a vertical and a horizontal feedhorn, giving four

different receive signals (at the transmit side there were two transmitters, one vertical, one horizontal). The audio (wideband audio 0-120Khz) from the FM detectors were sent to a combiner which dynamically selected the one with the best S/N ratio (by comparing the 104 Khz pilot tone vs the white noise at 80 Khz). The four receivers were only tied together at the audio level, none of the oscillators were synchronized or shared. Any receiver without a pilot tone was excluded from the selection process.

The reason for using diversity was to reduce the dropouts caused by the fast and slow fading that is commonly experienced over a microwave troposcatter link. With the four different paths, most of the time you had an adequate S/N over at least one of them (and usually over more than one).

I've heard that a few high end cellular car phones have diversity reception, using space diversity. They use two receive antennas spaced a few feet apart, then select the best signal of the two. This reduces the fading caused by multipath reception, since (hopefully) both antennas won't be in a null at the same time.

--GaryM

--

Gary Morris KK6YB
San Diego, CA USA

Internet: garym@alsys.com
Phone: +1 619-457-2700 x128 (work)

Date: 17 Aug 1993 19:42:58 GMT
From: spool.mu.edu!howland.reston.ans.net!usenet.ins.cwru.edu!magnus.acs.ohio-state.edu!jmilhoan@decwrl.dec.com
Subject: Bootlegger At ARRL N.E. Convention
To: info-hams@ucsd.edu

In article <1993Aug17.125716.14401@hemlock.cray.com> dadams@cray.com writes:
>
>What?!? What ever happened to "the right to remain silent"? What about
>the fifth amendment?

Like most laws, the courts have provided loopholes for themselves,
like: withholding information, resisting arrest, failure to comply,

Date: 17 Aug 1993 12:39:40 GMT
From: drt@athena.mit.edu
Subject: Cuba & Return postage
To: info-hams@ucsd.edu

In article <1993Aug17.004718.18108@newsgate.sps.mot.com> Jim Jaskie
<jim_jaskie@tempeqm.sps.mot.com> writes:

In article <24osto\$8kt@cville-srv.wam.umd.edu> Scott Richard Rosenfeld,
ham@wam.umd.edu writes:

>
>I have GOT to get this QSL from Cuba. Last night, I worked C07JC in
>Camaguey, Cuba, and he said that direct address (even gave PO Box) was
>the best way to go.
>
>Do Cuban hams expect return postage to be included? Obviously, sending
>dollar bills to Cuba is probably NOT a good idea, given the climate of
>hostility between the US and Cuba.
>
>So does one expect that a Cuban will pick up postage, or should I
>include an I.R.C.?
>
>Anyone have a Cuban stamp?
>
>Scott NF3I
>
>--
>73,
> _____ The
> \ / Long Original
>Scott Rosenfeld Amateur Radio NF3I Burtonsville, MD
> | Live \$5.00
> WAC CW/SSB WAS 95% of the way to DXCC _____| Dipoles!
Antenna!

Uncle Fidel just (couple of weeks ago) made the US dollar legal tender in
Cuba. Seems the country needs the support of emigrants sending money
back home to family. Hence he has made it legal and encourages it. SO I
imagine there is no problem sending C07JC a couple of greenbacks. Might
even help keep him on the air.

That embargo is still on. It's a good idea to check with the U.S.
Government (Treasury, is it?) to make sure this would be legal.

-drt
--

David R. Tucker KG2S drt@athena.mit.edu

|'Most political sermons teach the congregation nothing except |
what newspapers are taken at the Rectory.' -C.S. Lewis

Date: 17 Aug 1993 12:41:16 GMT
From: drt@athena.mit.edu
Subject: CW Prosigns (was: -.. ..- -- -...)
To: info-hams@ucsd.edu

In article <2052@arrl.org> jkearman@arrl.org (Jim Kearman) writes:

>People keep asserting this, and no one YET has told me WHY
>"W1MX DE KG2S SK"
>is incorrect, and WHY it should go before the callsigns.
>I am willing to conform, if those who assert can just
>come up with a good reason.

Neither callsign is considered part of the "transmission."
You send SK to let the receiving operator know s/he can
stop typing, then send the calls.

But if you're just ragchewing, who cares?

73, KR1S

Thanks. This at least makes sense, even if the reason isn't usually
of earthshaking importance.

-drt

--

David R. Tucker KG2S drt@athena.mit.edu

|'Most political sermons teach the congregation nothing except |
what newspapers are taken at the Rectory.' -C.S. Lewis

Date: Tue, 17 Aug 1993 19:43:08 GMT
From: sdd.hp.com!col.hp.com!news.dtc.hp.com!srngenprp!alanb@decwrl.dec.com
Subject: Heathkit SB104a
To: info-hams@ucsd.edu

david jerome adams (djadams@silver.ucs.indiana.edu) wrote:

:
: I am considering buying either a Heathkit HW101 or SB104a.
: I've gotten plenty of info on the 101, but none on the 104a. People
: have said to avoid the 104 because of certain problems, but can't

: say whether there was any problem with the A version. Has anyone
: out there used one and have any info they can lend? I'd appreciate
: any help you could offer. Thankx.

I'm not too familiar with the difference in the -A model.

IMO the SB104 was responsible for the demise of Heathkit as a viable supplier of amateur radio equipment. It was one of the first all-solid-state radios, but they didn't take the time to work out the bugs. The problems as I remember them:

Crummy sensitivity. Sensitivity is rarely a problem with any modern transceiver since atmospheric noise normally covers up receiver noise. The SB-104 was the exception. I think they spec'd 1 uV.

Terrible dynamic range. It takes quite some doing to have rotten sensitivity and bad dynamic range in the same receiver, but Heathkit managed it. As I recall, they used standard switching diodes (rather than PIN diodes) to switch the front end filters, and I always figured that was what caused the problem.

Excessive spurious signals on receive. If you tune across 10 meters when the band is quiet, you hear whistles, beeps and burps across the whole band.

Spurious signals on transmit. The one I particularly remember had to do with the remote VFO. Both VFO's run continuously, even when not in use. Because the transistor switch for the VFO outputs only has about 40 dB of isolation, your transmitted signal is only about 40 dB down on the unused VFO. It does it on receive, too (i.e. you can hear weakly on the unused VFO.)

On the subject of the remote VFO, the spotting procedure was, to say the least, crude. To spot the remote VFO to the internal VFO, you memorize the frequency from the digital readout, switch to the remote VFO, and tune it for the same frequency reading!

Transmit oscillations on 10 meters. The unit I had would develop an intermittent oscillation on 10. If you banged the cabinet, the oscillation would usually go away. Turned out one of the PC boards was grounded to a shield with beryllium copper finger stock. After a time, the copper would react with the aluminum shield and oxidize. The ground was necessary to keep the PA from oscillating.

Seems like there were several other serious problems, but I forget what they were. If you buy the rig (don't pay too much money for it!), go back and check the ham magazines for the couple years after the rig came out. There were lots of articles on how to modify the SB-104

to fix its numerous problems.

AL N1AL

Date: 17 Aug 1993 04:31:49 -0700
From: news!news.world.net!cyberspace.com!cyberspace.com!not-for-mail@uunet.uu.net
Subject: Questions from Nonham on Portable comm
To: info-hams@ucsd.edu

Gary Coffman (gary@ke4zv.uucp) wrote:

: In article <24jg53\$qvt@cyberspace.com> devlin@cyberspace.com (Erston Reisch)
writes:

: >system from a subnotebook I plan on buying (Bicom B260i). I would also
: >plan on connecting to other systems from my home system, via phone/modem
: >connections. Would this violate FCC connections? (Probably..Sigh.)

Can I legally access a telephone and then dial out from there while on the
packet radio? Isin't that considered retransmission?

Date: 17 Aug 1993 15:48:39 GMT
From: dog.ee.lbl.gov!overload.lbl.gov!agate!usenet.ins.cwru.edu!magnus.acs.ohio-
state.edu!math.ohio-state.edu!darwin.sura.net!haven.umd.edu!cs.umd.edu!
mojo.eng.umd.edu!chuck@network.ucsd.
Subject: Seeking Dial Cord
To: info-hams@ucsd.edu

In article <47540025@hpcuhe.cup.hp.com> donh@hpcuhe.cup.hp.com (Don Hay) writes:
>This will get the attention of the OM's out there! Does anyone know where
>I can get some "dial cord". Probably at the same place that sells "Relative
>Bearing Grease!". The radio in my 1960 VW bug uses dial cord, and it has
>broken. Any help would be appreciated!

If they used a cloth dial cord, you can use standard "bait casting" fish line.
If it is a plastic coated metal wire, use either nylon coated steel fishing
leader, or model aircraft control wire.

Chuck Harris - WA3UQV
chuck@eng.umd.edu

Date: 17 Aug 1993 17:17:54 GMT
From: dog.ee.lbl.gov!overload.lbl.gov!agate!spool.mu.edu!sdd.hp.com!col.hp.com!
news.dtc.hp.com!hpsc.it.sc.hp.com!icon.rose.hp.com!hpchase.rose.hp.com!
stan@network.ucsd.edu
Subject: Seeking Dial Cord
To: info-hams@ucsd.edu

donh@hpcuhe.cup.hp.com (Don Hay) writes:

>This will get the attention of the OM's out there! Does anyone know where
>I can get some "dial cord". Probably at the same place that sells "Relative
>Bearing Grease!". The radio in my 1960 VW bug uses dial cord, and it has
>broken. Any help would be appreciated!

I picked up a package of dial cord at my local Radio Control hobby shop.
RC people use it in RC planes for control cables for pull-pull rudders
and spoilers. I got 6 feet for ~ \$2. It looks identical to the dial cord
in my old McIntosh tuner, black, double braided ~ 1/16 dia)

stan

--

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~~~~~
~ Stan Witherspoon      N6SCE                ~ Disclaimer ~
~ Systems Technology Div. of Hewlett Packard~ These are my personal opinions ~
~ 8010 Foothills Blvd.   ~ and do not represent the views ~
~ Roseville Ca. 95678 (916) 785-5071 ~ of anyone or anything else. ~
~ Email: ucbvax!hplabs!hprpcd!stan or stan@hprpcd.rose.hp.com ~
~~~~~
```

Date: 18 Aug 93 00:22:12 GMT
From: dog.ee.lbl.gov!overload.lbl.gov!agate!spool.mu.edu!olivea!isc-br!tau-ceti!
comtch!iea!FredGate@network.ucsd.edu
Subject: Serious RTTY
To: info-hams@ucsd.edu

RD> From: rdewan@casbah.acns.nwu.edu (Rajiv Dewan)
RD> Newsgroups: rec.radio.amateur.misc

RD> I am interested in weak signal RTTY DX. I have a few questions:

RD> How good are AEA2232 and Grace DSP12?
RD> How do they compare with HAL and Tono modems?
RD> What software is good for RTTY operations?
RD> How would PK232 optimized for RTTY and a W9GR DSP
RD> filter compare to above?

I haven't tried the Grace DSP12 but the AEA2232 doesn't compare well at all for
45 baud RTTY with the HAL ST6000 or the Flesher TU470.

Software...I like quite a few different ones. The HAL DSRTTY is nice, I use the PK232 software. The Interflex PKGold types are nice.

Your last question would be an interesting test. Part of the question in weak signal work would have to be what frequency range? There are significant differences between say 80 meters and 20 meters. Also location in the country and propagation plays an important role. Here in the Pacific Northwest Polar flutter on 20 is a big problem, where on the East coast it might not be significant. Multi-path and distortion on 80 is a problem.

RD> Any pointers in setting up a serious RTTY station will be appreciated.

A serious RTTY station requires lots of aluminum in the air like all other serious stations. As far as serious RTTY gear I would use a HAL ST-8000 if the budget permitted or a AEA PK232 with external filters such as a Dovetron which can be had surplus for \$50 doing regen. I currently use a Flesher TU470 AKA Heathkit HD3030 into a PK232 and a HAL ST-6000. The advantage of the ST-8000 is that it can do about anything.

The AEA PK900 which I am playing with at the current time seems to work pretty well on RTTY.

Jay WS7I

* Origin: Radio Therapy (1:346/3)

Date: 17 Aug 93 18:30:28 GMT
From: ogicse!uwm.edu!vixen.cso.uiuc.edu!usenet.ucs.indiana.edu!
silver.ucs.indiana.edu!djadams@network.ucsd.edu
Subject: Unbuilt Heathkit Source
To: info-hams@ucsd.edu

Greetings! As I've just gotten in to ham radio, I missed out on that huge piece of amateur history known as Heathkit (though I did buy a HW101 assembled as my first rig). I'm feeling a bit nostalgic and was wondering if anyone had a source for old unbuilt kits (be it transmitters, meters or whatever). So, if you know of a small company with some old kits laying around or have an old pack you never got around to building, let me know...I'd like to build one. Thanx

Dave

David J Adams Internet: djadams@silver.ucs.indiana.edu

Amiga User and Flow Cytometry Advocate
Looking for a Kenwood TS520s and a mobile 2m rig
Conure Society of America. "Push the button Frank"

Date: 17 Aug 93 12:56:44 EST
From: pravda.sdsc.edu!news.cerf.net!usc!howland.reston.ans.net!spool.mu.edu!
nigel.msen.com!caen!malgudi.oar.net!uoft02.utoledo.edu!tulip!
mohan@network.ucsd.edu
Subject: What is needed to RTTY ?
To: info-hams@ucsd.edu

Hello,

I am interested to know the "WHAT & HOW" of setting up a RTTY operating station.

My transceiver is a TS-520S, so if someone has specific info regarding using it
for RTTY Please let me know your experience.

Thanks very much for the information.

--mohan/Waiting for license.

=====
+ Mohanakrishna Pakkurti + mohan@jupiter.cse.utoledo.edu +
+ HOME: 2239 University Hills Blvd #204, Toledo OH 43606. Phone:(419)536-9073 +
=====

Date: 17 Aug 1993 15:37:02 GMT
From: dog.ee.lbl.gov!overload.lbl.gov!agate!howland.reston.ans.net!spool.mu.edu!
bloom-beacon.mit.edu!mojo.eng.umd.edu!chuck@network.ucsd.edu
To: info-hams@ucsd.edu

References <9307057445.AA744577785@sceng.UB.com>,
<1993Aug6.134650.20127@VFL.Paramax.COM>, <24br0n\$cc6@k2.sj.ate.slb.COM>ed
Subject : Re: Wiring color conventions...

In article <24br0n\$cc6@k2.sj.ate.slb.COM> jones@San-Jose.ate.slb.com (Clark Jones)
writes:

>

>I'm really kind of suprised that no one has noticed that up until about 30
>years ago a lot of automobiles were _positive_ ground rather than the now-
>standard negative ground. Thus, the negative wire was "hot". Also, note
>that by far the biggest use of DC before the invention of the transistor
>(at least, low voltage DC) was in automobiles. So for positive ground
>DC systems, the color code matches AC.

The reason that old time auto's were positive ground is that the plus terminals of tar sealed car batteries leaked. The acid tended to eat away the wires connected to this terminal. So, rather than fix the battery's leakage problem, they used a cheap, uninsulated braided strap for the plus connection, and made it ground, to prevent accidental short circuits.

Chuck Harris - WA3UQV
chuck@eng.umd.edu

Date: 17 Aug 93 17:08:57 GMT
From: ogicse!emory!kd4nc!ke4zv!gary@network.ucsd.edu
To: info-hams@ucsd.edu

References <24jg53\$qvt@cyberspace.com>, <1993Aug15.130036.7560@ke4zv.uucp>, <24qfj5\$4ma@cyberspace.com>
Reply-To : gary@ke4zv.UUCP (Gary Coffman)
Subject : Re: Questions from Nonham on Portable comm

In article <24qfj5\$4ma@cyberspace.com> devlin@cyberspace.com (Erston Reisch) writes:

>Gary Coffman (gary@ke4zv.uucp) wrote:

>

>: In article <24jg53\$qvt@cyberspace.com> devlin@cyberspace.com (Erston Reisch) writes:

>: >system from a subnotebook I plan on buying (Bicom B260i). I would also
>: >plan on connecting to other systems from my home system, via phone/modem
>: >connections. Would this violate FCC connections? (Probably..Sigh.)

>

>Can I legally access a telephone and then dial out from there while on the
>packet radio? Isin't that considered retransmission?

For the purposes of this discussion, no it is not. Any connections your home machine makes are treated as just wireline extensions of the machine. It's only if you contact third parties, live people, and repeat their messages over the air that you would have a concern about retransmission. And that's legal anyway in the US as long as you maintain control of the radio transmissions. (Note, since both transmitters are in the US, you could wireline to another country and still not be handling international third party traffic under the rules. To qualify as international third party traffic, the *radio* signals have to do the border crossing.)

>From what I've learned from Gary's post and others, Packet seems the way I
>want to go. Now, two more questions:

>

>1) Are there any magazines that are a good source of packet info?

All the US amateur magazines print packet material of varying quality. None are particular to packet anymore, Chet Lambert's mag folded. There is a good newsletter that you get if you join TAPR, but it's not on the level that you need. And most of the books that have been published are hopelessly out of date, and/or aimed at too simplistic a level. Packet is evolving quicker than press runs can follow. The best printed resource available is the collected Computer Networking Conference proceedings published by the ARRL. If you get all the volumes, and remember that things have evolved greatly since the first was published, you can get up to speed on packet technology.

>2) How much is this going to cost me? Say, for example, I wanted to put in >a 9600 (or even 57.6) capable station w/ antenna, the material necessary >for the mobile station, etc.. Can anyone suggest what an area for costs >will be? I'm a HS student, and can't really afford to drop an incredible >amount of money in a station.. (Sigh).

Ok, let's look at a simple 1200 baud 2 meter setup. You'll need 2 TNCs at \$140 each, 2 radios at \$330 each, and two antennas, a base at \$120 and a mobile at \$40, plus assorted cables and a power supply for the base radio, say another \$150. That gives a grand total of about \$1200.

That's if you just go out and wave your checkbook at a dealer. If you shop the fleamarkets carefully, you can find suitable old Motorola or GE radios for \$50 each, or something like an IC22A for a few bucks more or less. You can build a Baycom style modem from parts for under \$20 and ftp the software from one of the archive sites. And you can make your own base antenna out of some copper plumbing pipe for another \$20. You'd best still buy a mobile antenna and mount for \$40. And you can use a car battery, \$24 on sale, to power the base rig. And you'll need a couple of amateur band crystals for the radios, another \$40, and maybe \$6 worth of wire. Now you're looking at about \$270 for two stations. That's about as cheap as you can go.

If you want to go 9600, you need those two \$140 TNCs and two \$100 9600 baud modem boards to fit in them. You may find TNCs at flea markets for \$65, and I caught a deal with Pac-Comm at Dayton where they were selling the 9600 baud boards for \$89. So add \$308 to the above 1200 baud setup and subtract the \$40 for the baycoms for a total of \$538 for two 9600 baud stations.

To do 56 kb, you need two GRAPES RF modems at \$250 each, two transverters at \$155 to \$780 each depending on what you want, or can find, and a digital interface at each end which can either be an Ottawa PI card or a souped up TNC (GRAPES shows you how) either for about \$120-\$140. That totals about \$1140 for two

stations, plus another \$60 for antennas and feedline, or about \$1200. About the same price as a bought all new 2 meter 1200 baud station pair, or a medium performance HF rig.

Obviously, if you have a partner for the other end, you can divide these prices by two.

Gary

--

Gary Coffman KE4ZV	"If 10% is good enough	gatech!wa4mei!ke4zv!gary
Destructive Testing Systems	for Jesus, it's good	uunet!rsiatl!ke4zv!gary
534 Shannon Way	enough for Uncle Sam."	emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244	-Ray Stevens	

Date: (null)

From: (null)

1) Are there any magazines that are a good source of packet info?

2) How much is this going to cost me? Say, for example, I wanted to put in a 9600 (or even 57.6) capable station w/ antenna, the material necessary for the mobile station, etc.. Can anyone suggest what an area for costs will be? I'm a HS student, and can't really afford to drop an incredible amount of money in a station.. (Sigh).

Thanks!

devlin@cyberspace.com - finger for pgp public key

Date: 17 Aug 1993 13:12:47 -0400

From: pravda.sdsc.edu!news.cerf.net!usc!howland.reston.ans.net!noc.near.net!news.delphi.com!news.delphi.com!not-for-mail@network.ucsd.edu

To: info-hams@ucsd.edu

References <jfhCBMC0B.L9L@netcom.com>, <1993Aug12.153325.23719@ke4zv.uucp>, <30722@ksr.com>

Subject : Re: Bootlegger At ARRL N.E. Convention

jfw@ksr.com (John F. Woods) writes:

>gary@ke4zv.uucp (Gary Coffman) writes:

>>In article <jfhCBMC0B.L9L@netcom.com> jfh@netcom.com (Jack Hamilton) writes:

>>>collinst@esvx19.es.dupont.com wrote:

>>>>You wanted bet your license that if the FCC sees you with a transmitter

>>>>on your belt, asks to see your license and you refuse that they wouldn't

>>>>suspend your license?

>>>How would they know which license to suspend?

>>The FCC has statutory authority to inspect any station for any reason

>>at any reasonable hour.

>And to directly answer Jack's actual question, though not definitively,
>they would probably find out when your lawyer let them know as part of
>the plea bargaining arrangement. If you refuse to show your license, they
>probably have "probable cause" to arrest you on the spot for unlicensed
>operation (remember, "probable cause" doesn't even have to come close to
>certainty). Childish games are rarely of much value when dealing with
>law enforcement personnel.

If you really want the definitive answer, purchase a copy of Part 97
Rules and Regulations and READ IT. It states, in plain English, that
the operating station and operator/station license is subject to inspection
by the FCC. . . no reason is needed nor required. Any licensee refusing
an inspection is subject to revocation of the license and/or fines.

-- Greg KE4DPX

End of Info-Hams Digest V93 #986
